

Report

**to the State of Iowa
78th General Assembly**

“Adopt-A-Highway Program Dangers”

**Iowa Department of Transportation
January 2000**

In response to: S.F. 424, Sec. 7

Executive summary

The State of Iowa 78th General Assembly directed the Department of Transportation (DOT) to conduct a study regarding Adopt-A-Highway activities and potential safety hazards posed by debris/features along the roadside, and regarding ways to minimize the risks to volunteers and the environment. To obtain information about these risks, a study committee formed by the department sent surveys to nearly 3,000 sponsors and DOT maintenance garage employees. The committee also obtained technical information about the specific potential safety and environmental risks posed by various types of debris/features.

The results of the study showed that the chances are 23 percent or less that an Adopt-A-Highway program sponsor doing litter pick-up on the right-of-way of a non-interstate road will encounter debris/features they *consider* hazardous (the vast majority of program sponsors “adopt” non-interstate roadsides). The percentage quoted represents a perceived hazard, not necessarily the specific potential hazard. Urine-filled containers, for instance, are considered by sponsors and employees as hazardous, but the Department of Public Health finds they do not represent a health risk unless contaminated with visible blood. Regarding actual injuries, of the 1,180 sponsors who responded, 26 reported past injuries to themselves or to someone in their group. Most injuries were relatively minor such as small cuts, scratches and rashes.

Based on input from the Iowa Department of Public Health, the Iowa Department of Natural Resources and the DOT, the study committee recommends that the department: a) continue the current safety precautions - these include increasing motorist awareness of litter pick-up activities by providing signs, orange vests and bags, and providing brochures listing safety practices such as not removing items that could be hazardous and wearing gloves and hard-soled shoes; and b) incorporate into the program the additional safety and environmental practices suggested by the DOT, the Iowa Department of Public Health, the Iowa Department of Natural Resources, and Adopt-A-Highway volunteers. For instance, regarding two categories of debris - medical waste and drug paraphernalia - sponsors are specifically cautioned to contact the DOT for removal.

Purpose of report

As part of the FY 2000 appropriations bill for the Iowa Department of Transportation (DOT), the legislature directed the department to “conduct a study regarding the possible dangers of eligible activities which may be conducted by sponsors of the adopt-a-highway program and regarding measures which could prevent or minimize harm to the environment or to an individual participating in such activities. The department shall submit a report on the results of the study to the general assembly by January 1, 2000.”

The purpose of this report is to convey to the legislature the information gathered in response to this section. This report will provide:

- Background
- Study results
- Summary
- Recommendations

Background

The study committee

In June 1999 the DOT created a study committee, with members representing:

- Adopt-A-Highway volunteers
- Iowa Department of Public Health, Center for Acute Disease Epidemiology
- Iowa Department of Transportation maintenance garage employees
- Iowa Department of Transportation, Office of Maintenance Services
- Iowa Department of Transportation, Office of Policy and Legislative Services
- Iowa Department of Transportation, Operations and Finance Division - Employee Safety section

Additional information was provided by:

- Iowa Department of Transportation, Office of Process Review (statistics)
- Iowa Department of Transportation, Operations and Finance Division - Environmental Unit (environmental issues)
- Iowa Department of Natural Resources (environmental issues)

The Adopt-A-Highway program

Overview

The Iowa Department of Transportation's Adopt-A-Highway program is part of a national effort to build community support for anti-litter and highway beautification efforts, and to improve the appearance of the nation's roadsides. Under the program, the DOT makes certain segments of right-of-way along state-owned roads available for "adoption" by volunteer sponsors (landowners, community organizations, individuals). Most sponsors in Iowa choose litter pick-up as their focus, although some elect to take on such tasks as planting and maintaining trees, shrubs, wildflowers and native grasses. The Iowa program has grown from 37 initial sponsors in 1989 to nearly 2,000 sponsors in 1999.

Adopt-A-Highway scope of activities

Sponsors are generally responsible for a two-mile segment of right-of-way for a minimum of two years. In the past, access-controlled roads such as interstates and freeways were not included in the program. In recent years, however, a very limited number of these segments have been made available for adoption. Litter removal must be done at least twice a year or as necessary to keep the area clean.

Adopt-A-Highway safety issues

The DOT emphasizes that while the work can be fun it is potentially dangerous due to traffic, potentially hazardous debris and uncertain footing, for example. A brochure provided by the department lists general safety recommendations.

Study methodology

A major source of information for this study was a perception survey of Adopt-A-Highway volunteers and DOT maintenance garage employees (survey form attached). The survey was conducted in September/October 1999. Although the legislation specifically called for studying potential hazards to Adopt-A-Highway sponsors, the committee chose to seek and use input, in all phases of the study, from DOT maintenance garage employees as well. Their extensive experience working within the right-of-way - mowing, picking up litter and other activities - makes them a valuable source of information about the debris/features found there. The survey was mailed to:

- representatives from each of the current Adopt-A-Highway sponsors.....1,921
- DOT maintenance garage employees.....1,039

To obtain statistically valid data, the committee needed responses from 345 Adopt-A-Highway representatives and 70 maintenance garage employees. The responses far exceeded those thresholds. The number of responses were:

- representatives from each of the current Adopt-A-Highway sponsors.....1,180
- DOT maintenance garage employees.....836

From this data and with input from the DOT, the Iowa Department of Public Health and the Iowa Department of Natural Resources, the committee sought to answer four basic questions:

- 1) *What debris/features (such as drug paraphernalia and erosion holes) are found along the roadway?* [see page 5]
- 2) *How commonly are they found?* [see page 6]
- 3) *What is the a) perceived, and b) specific potential risk to an Adopt-A-Highway volunteer?* [see pages 7 and 8]
- 4) *What can be done to prevent or minimize any health and environmental risks posed by the debris/features?* [see page 11]

Note: The committee identified and defined eight categories of debris/features. Graph headings in this report refer to the following definitions:

Sharp objects (such as broken glass, barbed wire, metal objects, other debris)

Medical waste (such as blood or body fluids on anything, IV bags, tubing, debris from crashes)

Urine-filled containers (such as pop bottles and milk jugs)

Human solid waste (such as diapers, feces in containers)

Drug paraphernalia (needles, meth lab grouping such as ether cans,

gas cans with tubes, small propane tanks, etc.)

Vegetation (such as poison ivy; steep, wet terrain; low branches; tall grasses)

Objects in the right-of-way (such as drainage wells, culverts, erosion holes, intake covers)

Animals/insects (such as rodents, snakes, dead animals on the roadside, ticks, yellow jackets, bees)

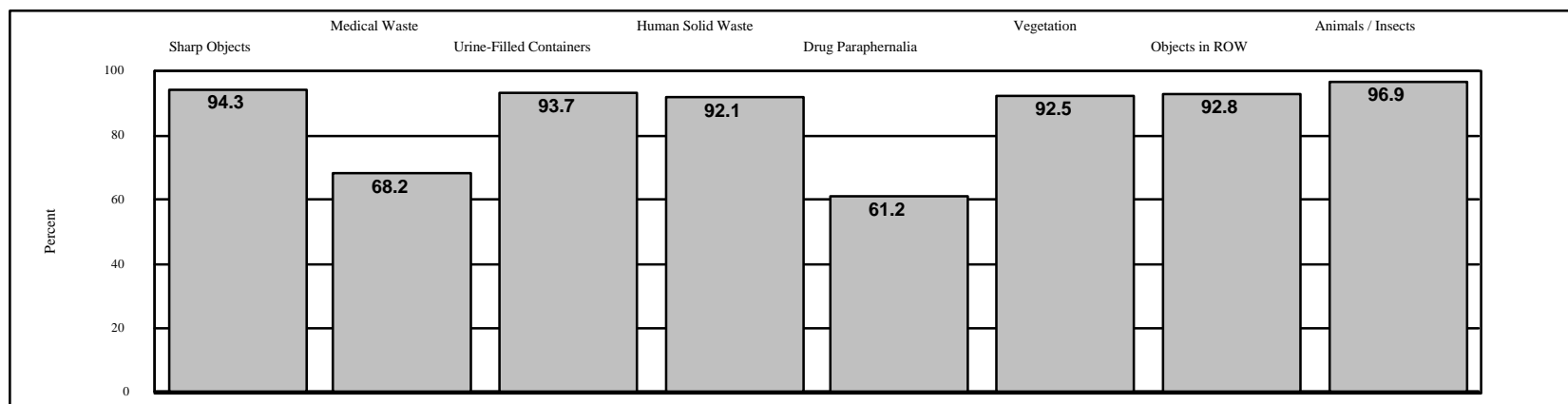
Study results

Note: The study committee anticipated some differences between interstates and non-interstates in the type/quantity of debris. Accordingly, the data for these two types of roadway was analyzed separately. Since very few Adopt-A-Highway volunteers pick up litter on interstates, the interstate respondents were mostly DOT maintenance garage employees. For definitions of categories, see page 4.

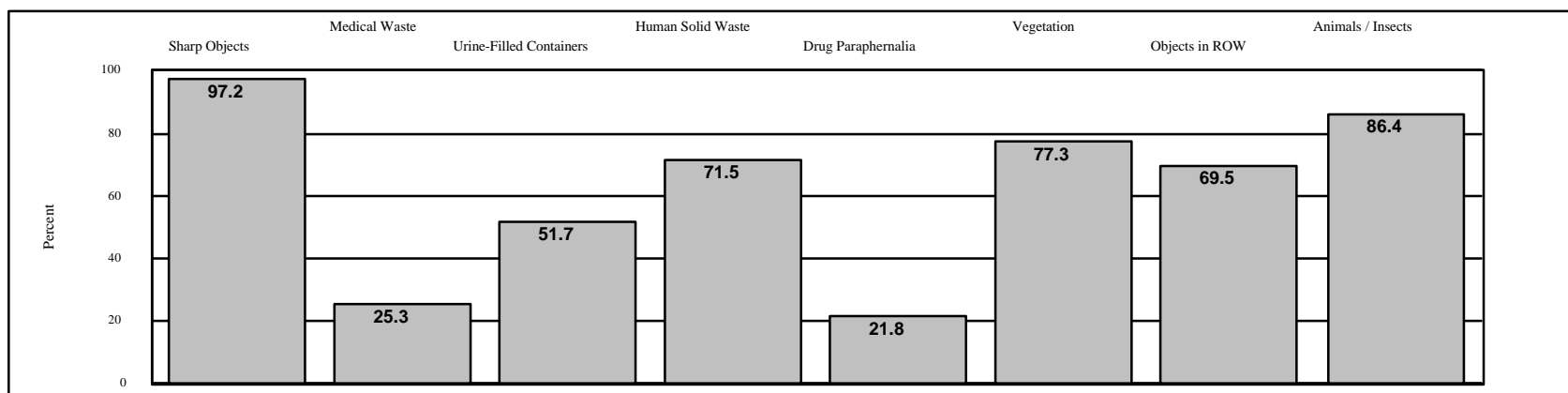
Question 1: What types of debris/features are found along the roadside?

The percentage in each category represents the percentage of respondents who said they had observed the listed item within the last year while picking up litter.

INTERSTATE



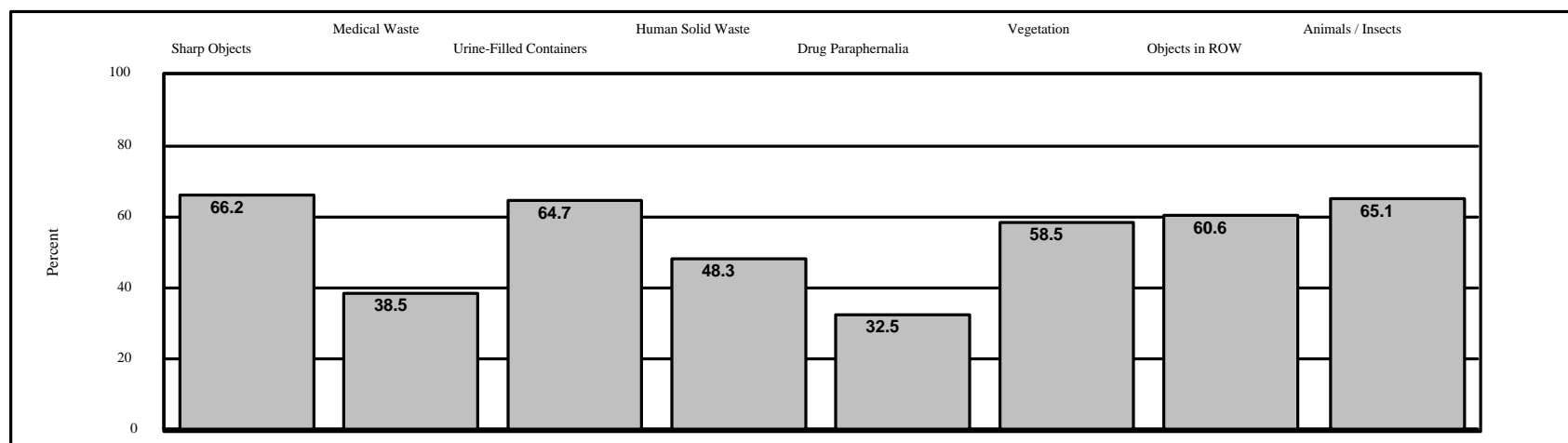
NON-INTERSTATE



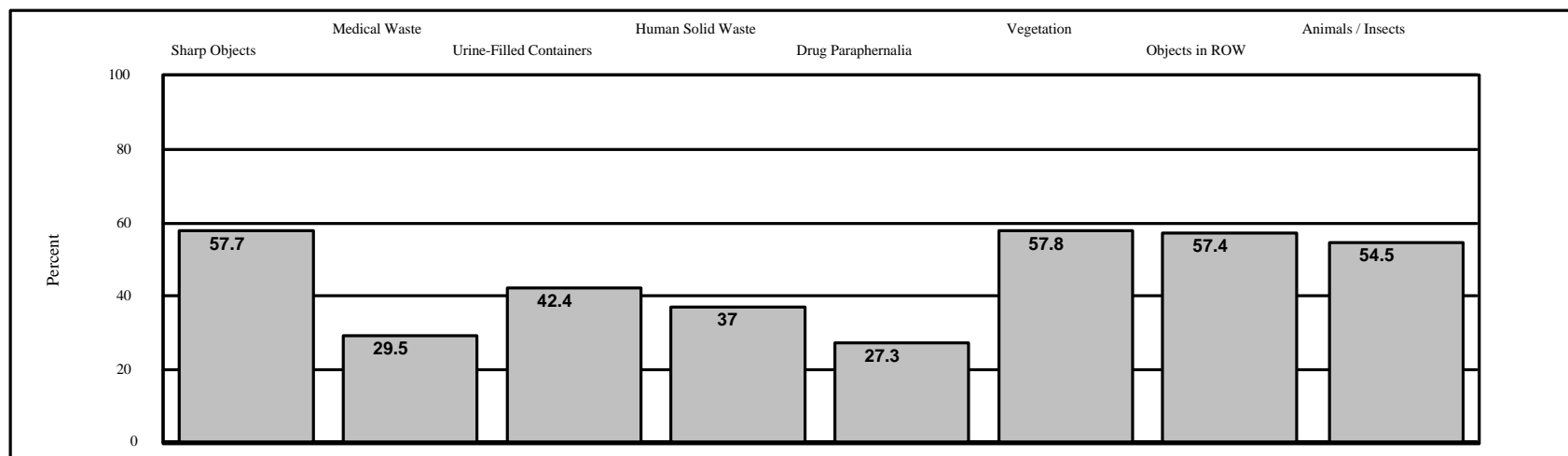
Question 2: How commonly are they found?

The following percentages represent estimates by the respondents of the percentage of time they've observed each type of item while picking up litter in the last year.

INTERSTATE



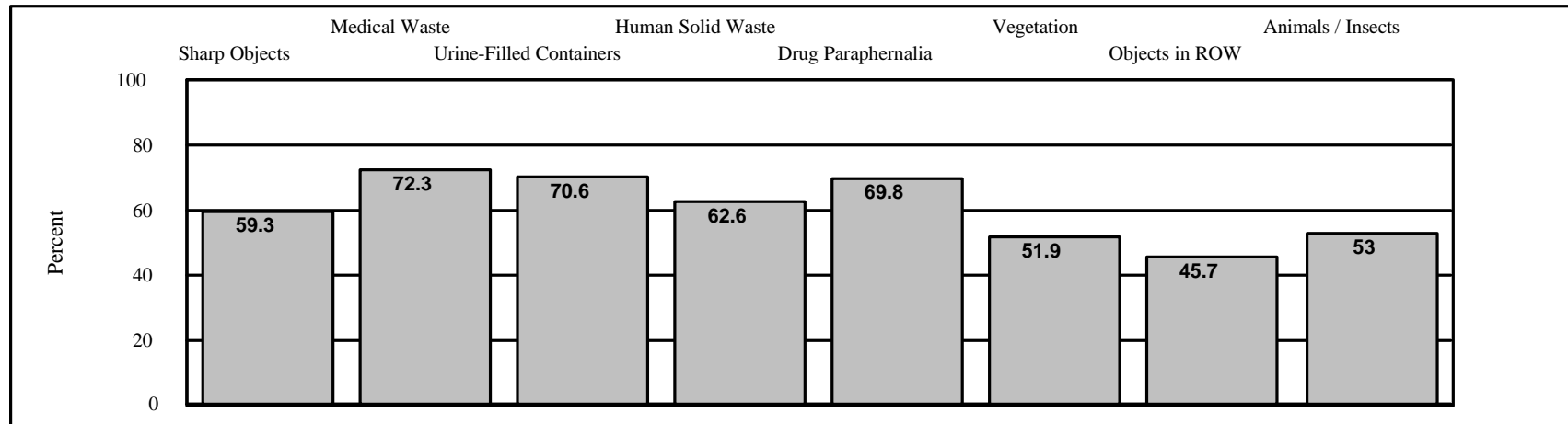
NON-INTERSTATE



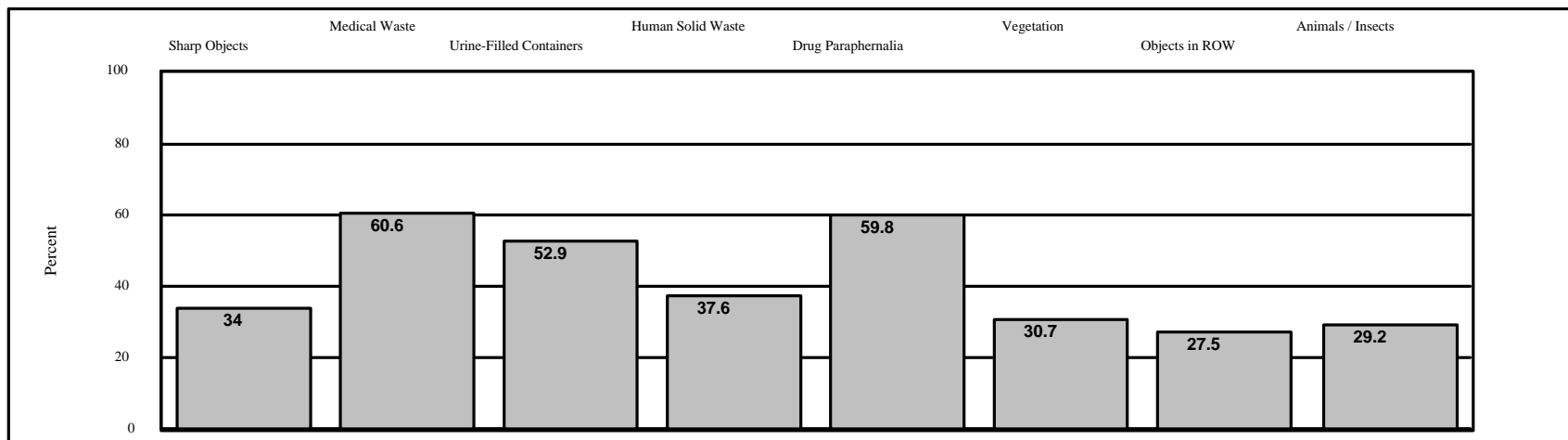
Question 3: What is the a) perceived and b) specific potential risk to an Adopt-A-Highway volunteer?

a) Perceived risk - Since a certain type of debris/feature may pose a hazard in some situations but not in others, respondents were asked the following question: "When you observed this item, what percent of the time did you consider it a hazard to your safety?" The percentages in these graphs represent their answers.

INTERSTATE



NON-INTERSTATE



b) Specific potential risk - The following information was provided by the Iowa Department of Public Health and the Iowa Department of Transportation.

<u>Sharp objects</u> (such as broken glass, barbed wire, metal objects, other debris)	<u>Medical waste</u> (such as blood or other body fluids on anything, IV bags, tubing, debris from crashes)	<u>Urine-filled containers</u> (such as pop bottles and milk jugs)	<u>Human solid waste</u> (such as diapers, feces in containers)	<u>Drug paraphernalia</u> (needles, meth lab groupings such as ether cans, gas cans with tubes, small propane tanks, etc.)	<u>Vegetation</u> (such as poison ivy; steep, wet terrain; low branches; tall grasses)	<u>Objects in the right-of-way</u> (such as drainage wells, culverts, erosion holes, intake covers)	<u>Animals/ insects</u> (such as rodents, snakes, dead animals on the roadside, ticks, yellow jackets, bees)
Risk: Various, such as lacerations, abrasions and puncture wounds.	Risk:* Hepatitis A,B, & C HIV	Risk:* None, unless contaminated with visible blood.	Risk:* Various diseases can be transmitted with oral or ingested exposure.	Risk:* Various, including injury due to flammability explosion, chemical burns, inhaled chemicals. Also, needles may be contaminated with blood.	Risk: Various, such as skin rashes and allergic reactions.	Risk: Various, such as physical injury or trauma.	Risk: Various, such as stings and animal bites.

** Blood and certain other body fluid carries the risk of disease when the human source is infectious, and transmission is through non-intact skin or mucous membrane.*

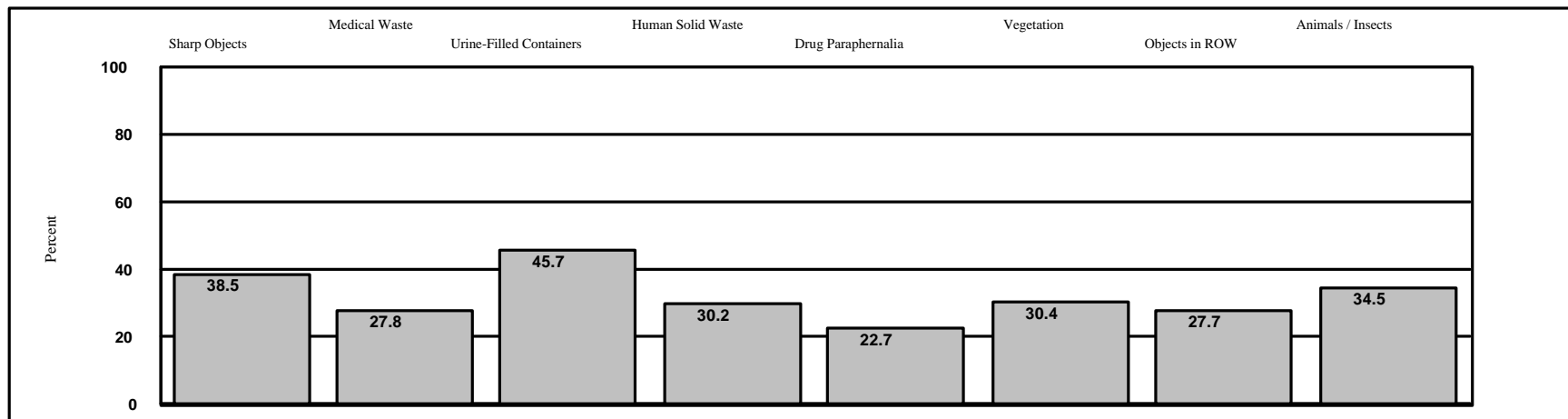
Additional safety risk: In the comment section of the survey, a significant number of respondents mentioned "traffic" as a major safety risk. The dangers include being struck by a vehicle leaving the roadway and being hit with debris thrown from passing vehicles.

Summary

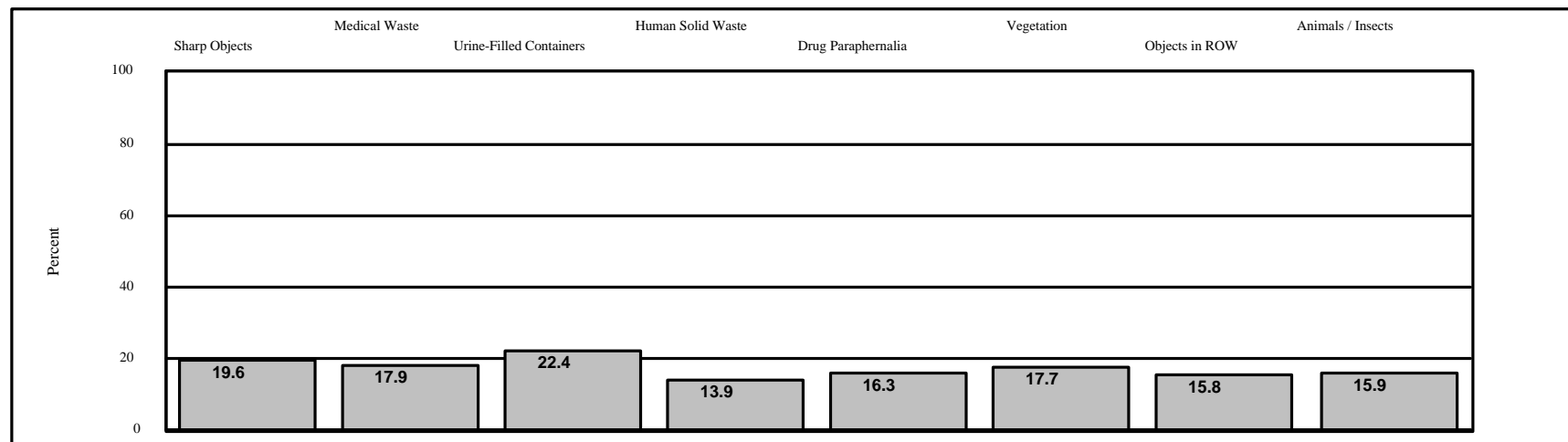
Combined percentages

To summarize the results, the percentages given in answer to questions 2 and 3 were multiplied. The resulting percentages represent the chances that a person picking up litter along two miles of right-of-way will encounter debris/features they would consider hazardous. Note: These percentages indicate perceived hazard, not necessarily the specific potential safety risk. For information about safety risks associated with each category, see page 8.

INTERSTATE



NON-INTERSTATE



As the graphs in this section indicate, the chances are 23 percent or less that an Adopt-A-Highway program sponsor doing litter pick-up on the right-of-way of a non-interstate road will encounter debris/features they *consider* hazardous. As mentioned earlier in the report, interstate percentages reflect mostly DOT employee reports, since very few interstate roadsides are available for adoption by sponsors. The difference between interstate and non-interstate percentages *may* reflect some difference in reporting by the two groups, and also the fact that employees are out picking up litter much more often than are Adopt-A-Highway sponsors. Non-interstate percentages do reflect the combined observations of DOT employees and volunteers.

Information from survey comments

Injuries reported

Respondents were asked to list any injuries to themselves or someone in their group that had occurred while picking up litter. Of the 1,180 survey forms returned by sponsors, 26 indicated some type of injury had occurred. The most serious injuries reported were a sprain, a cut requiring stitches, and a snake bite. The most common injuries were small cuts, scratches and rashes.

Safety suggestions

Respondents were asked to list any suggestions they had to help ensure the safety of volunteers and garage employees while removing litter. The majority of respondents had suggestions. The two most frequently mentioned were: 1) that the DOT provide gloves to volunteers, and 2) that the right-of-way be mowed more frequently. In keeping with comments about the dangers posed by passing traffic, many also said they would like to find a way to slow down the traffic when they are picking up litter. There were many positive comments about the program, however, such as "No problems. Continue to believe AAH program is helpful and we are happy to participate in it." All suggestions and comments will be reviewed and considered.

Information from other states

To widen the perspective of the study, e-mail queries were sent to transportation departments in the 49 other states asking whether they had carried out a similar survey effort and, if so, what was found. Five states replied: Missouri, Texas, Maine, Illinois and Ohio. None had conducted studies of this nature, and most expressed an interest in the results of such a study.

Recommendations

Question 4: What can be done to prevent or minimize any health and environmental risks?

a) Continue the following current safety precautions:

To increase motorist awareness of litter pick-up activities by Adopt-A-Highway sponsors, the DOT posts permanent signs with flip-down “workers ahead” symbols, and provides orange safety vests and orange garbage bags. In addition, the DOT provides Adopt-A-Highway sponsors with a brochure making specific safety recommendations. Those recommendations include:

- We recommend one adult supervisor per four children - keep children in sight at all times
- Park all vehicles off roadway and shoulders
- Where possible, access to highway right-of-way should be gained from off the right-of-way rather than from the roadway surface
- Stay well clear of any work zone project
- Face oncoming traffic
- Wear your orange vests when working on rights-of-way
- Wear light-colored clothing
- Wear a hat and long sleeves
- Wear gloves
- Leather boots or hard-soled shoes should be worn
- Watch footing when walking on slopes
- Be alert for holes and obstacles
- Look over entire area for dropoffs, washouts, open tiles or obstacles prior to working in the right-of-way
- You are not expected to pick up litter from median, pavement, or within ten feet of the pavement edge. These areas will be cleaned by the DOT.
- Remove ALL excess material after planting trees, shrubs, etc.
- Leave no holes or depressions in the roadside at the completion of any portion of work
- Do not remove hazardous substances - if in doubt, contact highway personnel
- Remember: whatever your project, you must be prepared for an emergency

b) Incorporate into the program the following additional recommendations:

(Provided to the study committee by the Iowa Department of Public Health, the Iowa Department of Natural Resources, the DOT and Adopt-A-Highway volunteers.)

- **In general, do not remove hazardous substances - contact the DOT. If in doubt about what something is or whether or not it is hazardous, do not remove - contact the DOT. Carry a cell phone for emergency purposes.**
- **Sharp objects** - To remove broken glass use a shovel and bucket and/or leather gloves. When removing sharp objects, use a puncture resistant container. No significant environmental risk.
- **Medical waste** - Do not pick up; considered hazardous. Notify DOT for removal. No significant environmental risk.
- **Urine-filled containers** - Although not considered a risk unless it contains visible blood, use of plastic or rubber gloves is recommended. No significant environmental risk.
- **Human solid waste** - Carry soap-and-water and paper towels, or waterless antibacterial lotion. Wash hands after completing pick-up, and before eating or preparing food. Use of plastic or rubber gloves is recommended. Minimal environmental risk, due to runoff. Environmental mitigation recommendation: removal.
- **Drug paraphernalia** - Do not pick up; considered hazardous. Notify the DOT for removal. Minimal risk for groundwater contamination, chemicals released into the air. Environmental mitigation recommendation: removal by proper authorities.
- **Vegetation** - If contact with poison ivy, etc. occurs, contact your healthcare provider for diagnosis and treatment. No significant environmental risk.
- **Objects such as drainage wells** - Don't step where you can't see. No significant environmental risk.
- **Animals/Insects** - Use insect repellent containing DEET. Do a tick check when finished or within 24 hours. Don't pick up dead animals; for large animals notify the DOT for removal. Don't try to capture live animals. Contact your health care provider for diagnosis and treatment of bites, etc. No significant environmental risk.

Survey for Adopt-A-Highway sponsors and DOT garage employees

Please return by **Oct 15, 1999** **G** Check here if you would like to receive a copy of the final report
 If you have questions, please call Pat Makovec, DOT Maintenance Division, 515-239-1471. **Thank you!**

INTERSTATE Highways	Within the last year, have you or a group member observed the following items when picking up litter:	If you have, please estimate the percentage of litter removal sessions during which you observed it.	When you observed this item, what percent of the time did you consider it a hazard to your safety?
<u>Sharp objects</u> (such as broken glass, barbed wire, metal objects, other debris)	Yes _____ No _____	_____ %	_____ %
<u>Medical waste</u> (such as blood or body fluids on anything, IV bags, tubing, debris from crashes)	Yes _____ No _____	_____ %	_____ %
<u>Urine-filled containers</u> (such as pop bottles and milk jugs)	Yes _____ No _____	_____ %	_____ %
<u>Human solid waste</u> (such as diapers, feces in containers)	Yes _____ No _____	_____ %	_____ %
<u>Drug paraphernalia</u> (Needles, meth lab grouping such as ether cans, gas cans with tubes, small propane tanks, etc)	Yes _____ No _____	_____ %	_____ %
<u>Vegetation</u> (such as poison ivy; steep, wet terrain; low branches; tall grasses)	Yes _____ No _____	_____ %	_____ %
<u>Objects in the right-of-way</u> (such as drainage wells, culverts, erosion holes, intake covers)	Yes _____ No _____	_____ %	_____ %
<u>Animals/insects</u> (such as rodents, snakes, dead animals on the roadside, ticks, yellow jackets, bees)	Yes _____ No _____	_____ %	_____ %

Please list, with a name and approximate date, any past injuries to yourself or a member of your group which you recall. Also, please list any suggestions for measures that could be implemented to help ensure the safety of Adopt-A-Highway volunteers and DOT garage employees removing litter from the roadside.

To mail completed survey, please fold and tape - do not staple.